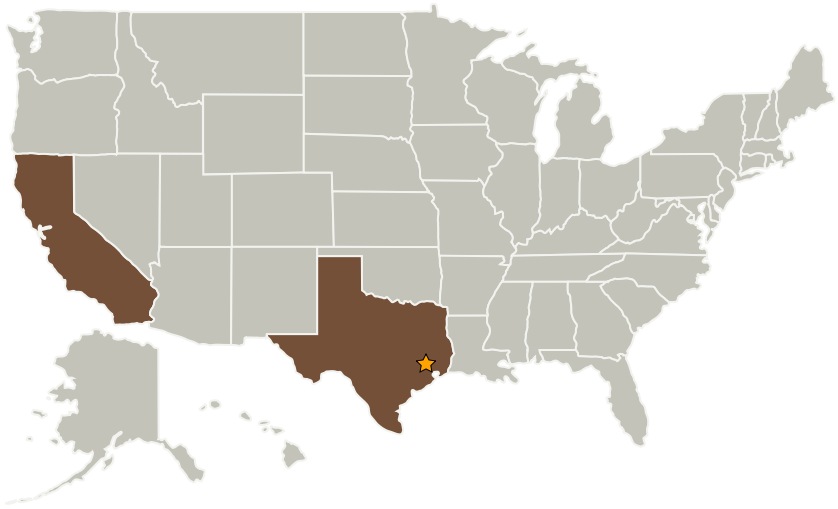
Ultra-compact, High Resolution, LADAR system for 3D Imaging, Phase I

Completed Technology Project (2004 - 2004)

Project Introduction

SiWave proposes to develop an innovative, ultra-compact, high resolution, long range LADAR system to produce a 3D map of the exterior of any object in space such as the Space Shuttle, the International Space Station or a future Space Solar Power Satellite to inspect for damage. Our approach combines coherent optical detection with a small transmitting beam for high-speed scanning and fast electronics for image processing. The use of coherent detection overcomes the problems of weak signals (due to the limited power) and signal fluctuations caused by surface roughness. The resulting LADAR system weighs less than 300 gm and has a resolution of 1 mm at 10 m.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas
Siwave, Inc.	Supporting Organization	Industry	Arcadia, California

Primary U.S. Work Locations	
California	Texas

Ultra-compact, High Resolution, LADAR system for 3D Imaging, Phase I

Table of Contents

Project Introduction 1
Primary U.S. Work Locations and Key Partners 1
Organizational Responsibility 1
Project Management 2
Technology Areas 2

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Johnson Space Center (JSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Ultra-compact, High Resolution, LADAR system for 3D Imaging, Phase I

Completed Technology Project (2004 - 2004)

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Jing Xu

Technology Areas

Primary:

- TX09 Entry, Descent, and Landing
  - TX09.4 Vehicle Systems
    - TX09.4.7 Guidance, Navigation and Control (GN&C) for EDL